

Isuru Wijesiri

I develop production AI systems at WSO2

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Education

University of Moratuwa, Computer Science and Engineering

Sri Lanka

- Dean's List: 7 out of 8 semesters (Semesters 1, 3, 4, 5, 6, 7, 8)
- Thesis: Privacy-Preserving Machine Learning on Distributed Graphs (Grade: A+)
- University Award for Best R&D Project (highest marks achieved)

2017 – 2021

Experience

WSO2, Associate Technical Lead (AI R&D)

Sri Lanka

Technical lead for AI capabilities in the WSO2 Integrator platform.

Feb 2026 – present

- Designing multi-agent systems and developing/training custom models for agentic workflows.
- Owning architecture, execution, and delivery of agentic developer workflows.
- Driving roadmap, coordinating contributors, and ensuring production readiness (security, scalability, reliability).
- Mentoring engineers and interns to ship high-quality AI features.

2 months

WSO2, Senior Software Engineer (AI R&D)

Sri Lanka

Led the end-to-end initiative to modernize WSO2 Micro Integrator with AI.

Jan 2024 – Feb 2026

- MI Copilot: Owned from ideation to production. NL to Synapse DSL code generation with version-aware retrieval, XSD/Schematron validation, LSP diagnostics, and automated repair loops. 300+ active daily users.
- MI Copilot Agent Mode: Cursor/Claude Code-style agentic integration engineer inside VS Code with 22 tools across 8 categories, multi-step planning, and autonomous task execution.
- Integrated domain-specific embedding models into MI Copilot retrieval system for low-latency semantic code search.
- Optimized operational cost via advanced prompt caching (~90% cost reduction) and production hardening/observability hooks.
- Small Language Model initiative: Initiated domain-specialized SLM training for Ballerina to enable low-latency on-prem code generation.

2 years 2 months

WSO2, Software Engineer

Sri Lanka

Built open-source products for API Management and Integration.

Jan 2022 – Dec 2023

- Delivered multiple end-to-end features for WSO2 API Manager and contributed 40+ product improvements.
- Distributed Transaction Counter: Scalable transaction counting for high-throughput API gateways handling 10,000+ TPS with sub-millisecond latency.
- GenAI / Multi-agent framework: Led a low-code framework supporting multiple LLM backends + vector stores, reducing delivery time and standardizing deployments.

2 years

<p>University of Moratuwa, Lead Research Collaborator Supervisors: Dr. Surangika Ranathunga (Massey University, NZ) and Dr. Nisansa de Silva (UOM)</p> <ul style="list-style-type: none"> • Leading Google-funded research on Automatic Post-Editing (APE) for low-resource languages (Sinhala, Tamil). • Proposing controllable minimal-edit post-editing with hidden-state anchoring and dynamic edit-distance constrained decoding. • Driving experimentation, evaluation, and research direction for practical APE workflows. 	<p>Sri Lanka Aug 2025 – present 8 months</p>
<p>Persistent Systems, Research Engineer</p> <ul style="list-style-type: none"> • Developed architectures and POCs for a new API Marketplace intended to host and manage thousands of APIs. 	<p>Sri Lanka Mar 2021 – Dec 2021 10 months</p>
<p>University of Moratuwa, Graduate Researcher (Thesis Continuation) Supervisors: Prof. Sanath Jayasena, Dr. Miyuru Dayarathna</p> <ul style="list-style-type: none"> • Extended undergraduate thesis on privacy-preserving distributed graph ML. • Developed novel common-attribute and common-entity aggregation mechanisms for heterogeneous multi-organization graph learning while maintaining privacy. • Implemented prototype on JasmineGraph distributed graph database. 	<p>Sri Lanka June 2021 – Dec 2021 7 months</p>
<p>University of Moratuwa, Undergraduate Thesis Researcher Supervisors: Prof. Sanath Jayasena, Dr. Miyuru Dayarathna</p> <ul style="list-style-type: none"> • Researched privacy-preserving distributed graph ML and federated GNNs for large-scale link prediction. • Built memory-efficient distributed/federated GCN training enabling training on very large graphs on commodity hardware (JasmineGraph). • Peer-reviewed publication at IEEE Big Data 2020. 	<p>Sri Lanka Jan 2020 – June 2021 1 year 6 months</p>
<p>Zeptolytics, Machine Learning Research Intern</p> <ul style="list-style-type: none"> • Developed end-to-end automated data analytics and Business Intelligence pipeline for the ZEPTO platform. • Resulted in 40% improvement in decision-making speed for client companies. • Built using Python, Scikit-learn, pandas, NumPy. Deployed with Docker and AWS. 	<p>Colombo, Sri Lanka June 2019 – Dec 2019 7 months</p>

Publications

<p>Memory-Efficient Graph Convolutional Network-Based Distributed Link Prediction Isuru Wijesiri, Miyuru Dayarathna, Sanath Jayasena ieeexplore.ieee.org/document/9377874 (2020 IEEE International Conference on Big Data (Big Data))</p>	<p>Jan 2020</p>
<p>Anomaly Detection using Deep Reconstruction and Forecasting for Autonomous Systems Isuru Wijesiri, Sachith Gunasekara, Tharindu Wickramasinghe arxiv.org/abs/2006.14556 (arXiv:2006.14556)</p>	<p>Jan 2020</p>

Projects

<p>MI Copilot - Agentic Coding Assistant for WSO2 MI</p> <ul style="list-style-type: none"> • Cursor/Claude Code-style coding agent for enterprise integration with 300+ daily active users. • 22 tools across 8 categories: project management, connector management, XML LSP validation, builds, and runtime workflows. • +24 percentage-point improvement on HumanEval over base LLM (0-shot) using multi-agent iterative refinement and execution-guided verification. 	<p>2023 - present</p>
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Lightweight Code Retrieval Models (22M/33M parameters)	Jan 2025
<ul style="list-style-type: none"> • Fine-tuned MiniLM-based sentence-transformer models (512-dim) for domain-specific code retrieval using contrastive learning. • 97% Recall@10 and 95% MRR@10. Released on Hugging Face. 	
Toolflow - Structured Agent Framework	Jan 2025
<ul style="list-style-type: none"> • Lightweight research framework for LLM-based agents with structured output guarantees and automatic tool invocation. 	
Naturalpy - Natural Programming Interface for Python	Jan 2025
<ul style="list-style-type: none"> • Natural-language-driven programming abstractions for Python with LLM-backed function invocation and code synthesis. 	
Distributed Transaction Counter for WSO2 Synapse	Jan 2022
<ul style="list-style-type: none"> • Scalable transaction counting for high-throughput API gateways handling 10,000+ TPS with sub-millisecond latency. 	
Privacy-Preserving ML on Federated Graph Database Systems	Jan 2020
<ul style="list-style-type: none"> • Federated learning for collaborative, privacy-preserving graph learning on JasmineGraph distributed graph database. • IEEE Big Data 2020 publication. Technologies: C++, Python, StellarGraph, TensorFlow. 	
Anomaly Detection for Autonomous Systems	Jan 2020
<ul style="list-style-type: none"> • Self-supervised deep reconstruction and forecasting for drones (video + IMU). • 94% accuracy / 0.95 F1 on video, 100% accuracy / 0.98 F1 on IMU. IEEE Signal Processing Cup 2020 runner-up. 	

Awards

IEEE Signal Processing Cup 2020 - First Runner-Up	Jan 2020
<ul style="list-style-type: none"> • First Runner-Up at ICASSP 2020 finals (team Icarus Inhibition). • Achieved the highest score in the selection round for anomaly detection in autonomous drone systems using multimodal sensor data. 	
University Award for Best R&D Project	Jan 2021
<ul style="list-style-type: none"> • Highest marks achieved in undergraduate thesis research on distributed graph ML. 	
Virtusa Award	Jan 2019
<ul style="list-style-type: none"> • Awarded to the student who earned the highest marks for the semester 5 Software Engineering Project. • Issued by Department of CSE, University of Moratuwa. 	
Flu Shot Learning Challenge - 18th/4811 (top 0.4%)	Jan 2020
<ul style="list-style-type: none"> • DrivenData machine learning competition. 	
SLIIT Codefest Datathon - Champions	Jan 2019
<ul style="list-style-type: none"> • Winning team (XGCoders) of nationwide inter-university data mining competition. 	
iHack 5.0 - Winners	Jan 2019
<ul style="list-style-type: none"> • 24-hour inter-university software development hackathon at University of Colombo. • Team ODIGOS designed and developed a mobile/web app solving Sri Lanka's tourism issues. First place out of 59 teams. 	

Teaching

University of Moratuwa , Lab Assistant: Programming Fundamentals (CS1033)	Sri Lanka 2020 – 2021
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Private Tutoring, Private Tutor (Data Structures, ML, Physics & Maths)

2017 – 2021

- Mentored 60+ students.

WSO2 Technology Conference 2025, Conference Presenter

Jan 2025

- Technical deep-dive on blockchain architecture, consensus algorithms, and distributed ledger mechanisms.